

What is claimed is:

1. A method for determining a relationship between the timing of a local clock of a node with respect to the timing of a local clock of at least one other node in a wireless communications network, comprising:

transmitting a clock information request message from said node to said other node at a request transmission time;

receiving at said node a response message from said other node at a response reception time, said response message including timing information pertaining to a request reception time at which said other node received said clock information request message and response transmission time at which said other node transmitted said response message; and

calculating a difference between the timing of said local clock of said node and said local clock of said other node based on said timing information, said request transmission time and said response reception time.

2. A method as claimed in claim 1, further comprising:

calculating a propagation time for a signal to propagate between said node and said other node based on said timing information, said request transmission time and said response reception time.

3. A method as claimed in claim 1, wherein:

said request transmission time and said response reception time are indicated by said local clock of said node, and said request reception time and said response transmission time are indicated by said local clock of said other node.

4. A method as claimed in claim 1, wherein:

said method performs said transmitting, receiving and calculating steps to calculate a respective said difference between the timing of said local clock of said node and a respective said local clock of each of a plurality of said other nodes.

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5. A method as claimed in claim 4, further comprising:

calculating respective said differences between the timing of respective said local clocks of each of said plurality of other nodes and each other based on said difference between said respective differences between the timing of said local clock of said node and said respective local clocks of said plurality of other nodes.

6. A method as claimed in claim 1, wherein:

said network includes an ad-hoc communications network, and said node and said other nodes are adapted for use with said ad-hoc communications network.

7. A method as claimed in claim 1, wherein:

said node is a mobile node.

8. A method as claimed in claim 1, wherein:

said other node is a mobile node.

9. A method as claimed in claim 1, further comprising:

controlling said other node to transmit a subsequent signal at a beginning of a time slice;

receiving said subsequent signal at said node;

calculating a subsequent transmission time at which said local clock of said other node was reading when said other node transmitted said subsequent signal based on said calculated difference between the timing of said local clock of said node and said local clock of said other node; and

comparing said subsequent transmission time to a time representing a beginning of a time slice to determine a propagation time for said subsequent signal to propagate between said other node and said node.

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10. A system for determining a relationship between the timing of a local clock of a node with respect to the timing of a local clock of at least one other node in a wireless communications network, said system comprising:

a transmitter, adapted to transmit a clock information request message from said node to said other node at a request transmission time;

a receiver, adapted to receive at said node a response message from said other node at a response reception time, said response message including timing information pertaining to a request reception time at which said other node received said clock information request message and response transmission time at which said other node transmitted said response message; and

a processor, adapted to calculate a difference between the timing of said local clock of said node and said local clock of said other node based on said timing information, said request transmission time and said response reception time.

11. A system as claimed in claim 10, wherein:

said processor is further adapted to calculate a propagation time for a signal to propagate between said node and said other node based on said timing information, said request transmission time and said response reception time.

12. A system as claimed in claim 10, wherein:

said request transmission time and said response reception time are indicated by said local clock of said node, and said request reception time and said response transmission time are indicated by said local clock of said other node.

13. A system as claimed in claim 10, wherein:

said transmitter, receiver and processor perform said transmitting, receiving and calculating, respectively, to calculate a respective said difference between the timing of said local clock of said node and a respective said local clock of each of a plurality of said other nodes.

14. A system as claimed in claim 13, wherein:

said processor is further adapted to calculate respective said differences between the timing of respective said local clocks of each of said plurality of other nodes and each other based on said difference between said respective differences between the timing of said local clock of said node and said respective local clocks of said plurality of other nodes.

15. A system as claimed in claim 10, wherein:

said network includes an ad-hoc communications network, and said node and said other nodes are adapted for use with said ad-hoc communications network.

16. A system as claimed in claim 10, wherein:

said node is a mobile node.

17. A system as claimed in claim 10, wherein:

said other node is a mobile node.

18. A system as claimed in claim 10, further comprising:

a controller, adapted to control said other node to transmit a subsequent signal at a beginning of a time slice; and

wherein:

said receiver is adapted to receive said subsequent signal at said node; and

said processor is adapted to calculate a subsequent transmission time at which said local clock of said other node was reading when said other node transmitted said subsequent signal based on said calculated difference between the timing of said local clock of said node and said local clock of said other node, and to compare said subsequent transmission time to a time representing a beginning of a time slice to determine a propagation time for said subsequent signal to propagate between said other node and said node.